

## **Proposal for a New Project**

### **Ted Sanders**

The US EPA has recently updated its risk assessment on 1,3-butadiene (U.S. Environmental Protection Agency, 2002, Health assessment of 1,3-butadiene, National Center for Environmental Assessment, Washington, D. C., EPA/600/P-98/001F). The conclusion of this risk assessment is that 1,3-butadiene "is carcinogenic to humans by inhalation." This conclusion was arrived at through the use of a weight of the evidence approach. One set of studies that was used to arrive at this conclusion were occupational epidemiological studies that have examined cancer risk for workers exposed to 1,3-butadiene. These studies, in general, find a relatively weak association between 1,3-butadiene exposure and cancer; however, in all studies cited by the US EPA risk assessment the cancers involved were lymphomas (leukemia, non-Hodgkin's lymphoma, Hodgkin's disease, etc.). Although there are a number of studies in the literature that have examined the possible association of active smoking with such cancers, the findings are often inconsistent, and in general the association is quite weak for those studies that do find a positive response.

Since 1,3-butadiene in smoke has been provisionally identified as a major contributor to "cancer", yet data summarized by the US EPA do not suggest that 1,3-butadiene is associated with the type(s) of cancer most strongly associated with smoking, I think it is essential that we carry out a detailed review of the epidemiological literature. The first proposed step would be to thoroughly compile and analyze all epidemiological data for exposure to 1,3-butadiene to determine if there is epidemiological evidence linking exposure to 1,3-butadiene and other types of cancer. Assuming that such evidence is not found, the next step would be to compile and analyze all epidemiological data dealing with active smoking and blood lymphomas. The last piece of work would be to carry out a risk assessment using these data to determine if the two sets of data are congruent.

I would anticipate that this work would be carried out by a consultant, and I am reasonably certain that we have a consultant with the proper expertise available to us. At this time I could not predict how long this project would last, but I would guess about 8-12 months.

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